

IN THE CLAIMS

Please cancel Claims 3 and 16 without prejudice or disclaimer to the subject matter contained therein.

Please amend Claims 1 and 14 as follows.

1. (Currently Amended) An inkjet printhead having a plurality of printing elements, the printhead comprising:

a plurality of switching elements comprising NMOS transistors, being arranged in correspondence with the respective printing elements, configured to control energization of the respective printing elements, wherein the plurality of printing elements and the plurality of switching elements are divided into multiple groups;

a first power supply line of a higher voltage and a second power supply line of a lower voltage, configured to supply electric power to the printing elements;

a reference voltage circuit configured to generate a reference voltage;

a current generation circuit configured to generate a reference current on the basis of the reference voltage generated by said reference voltage circuit; and

a plurality of constant current ~~sources comprising~~ sources, each of which comprises an NMOS transistor ~~transistor~~ and is connected to one of the multiple groups such that each group has a constant current source, configured to supply a constant current to the printing elements in each of the multiple groups, wherein the reference current is directly supplied to the NMOS

transistor of each constant current source so as to supply the constant current in accordance with the reference current,[[;]]

~~a reference voltage circuit configured to generate a reference voltage; and~~

~~a current generation circuit configured to generate a reference current on the basis of the reference voltage generated by said reference voltage circuit;~~

wherein each of the plurality of printing elements is directly connected to said first power supply line and each of the constant current sources is directly connected to said second power supply line, and the plurality of constant current sources supply, in accordance with the reference current generated by said current generation circuit, supply the constant currents via said switching ~~elements arranged in correspondence with the respective printing elements, and~~

one of the printing elements, one of said switching elements and one of said constant current sources are connected in series between said first power supply line and said second power supply line, in an order of the one printing ~~elements, said element, said one~~ switching ~~elements element~~ and said one constant current ~~sources source~~ from said first power supply line to said second power supply line.

2. (Previously Presented) The printhead according to claim 1, wherein each of the plurality of constant current sources forms a current mirror circuit with a current output circuit portion of said current generation circuit.

3-4. (Cancelled)

5. (Original) The printhead according to claim 1, wherein said reference voltage circuit generates as the reference voltage a voltage obtained by amplifying a band gap voltage.

6. (Previously Presented) The printhead according to claim 1, wherein each of the NMOS transistors of said constant current sources operates in a saturation region wherein a drain current hardly changes with respect to a drain voltage.

7-13. (Cancelled)

14. (Currently Amended) A printhead substrate having a plurality of printing elements, the substrate comprising:

a plurality of switching elements comprising NMOS transistors, being arranged in correspondence with the respective printing elements, configured to control energization of the respective printing elements, wherein the plurality of printing elements and the plurality of switching elements are divided into multiple groups;

a first power supply line of a higher voltage and a second power supply line of a lower voltage, configured to supply electric power to the printing elements;

a reference voltage circuit configured to generate a reference voltage;

a current generation circuit configured to generate a reference current on the basis of the reference voltage generated by said reference voltage circuit; and

a plurality of constant current sources, each of which comprises an ~~comprising~~ NMOS ~~transistors~~ transistor and is connected to one of the multiple groups such that each group has a constant current source, configured to supply a constant current to the printing elements in each of the multiple groups, wherein the reference current is directly supplied to the NMOS transistor of each constant current source so as to supply the constant current in accordance with the reference current;

~~a reference voltage circuit configured to generate a reference voltage; and~~

~~a current generation circuit configured to generate a reference current on the basis of the reference voltage generated by said reference voltage circuit;~~

wherein each of the plurality of printing elements is directly connected to said first power supply line and each of the constant current sources is directly connected to said second power supply line, and the plurality of constant current sources ~~supply, in accordance with the reference current generated by said current generation circuit;~~ supply the constant currents via said switching ~~elements arranged in correspondence with the respective printing elements, and~~

one of the printing elements, one of said switching elements and one of said constant current sources are connected in series between said first power supply line and said second power supply line, in an order of the one printing ~~elements~~ element, said one switching ~~elements~~ element and said one constant current ~~sources~~ source from said first power supply line to said

second power supply line.

15. (Previously Presented) The substrate according to claim 14, wherein each of said plurality of constant current sources forms a current mirror circuit with a current output circuit portion of said current generation circuit.

16. (Cancelled)

17. (Original) The substrate according to claim 14, wherein said reference voltage circuit generates as the reference voltage a voltage obtained by amplifying a band gap voltage.

18. (Previously Presented) The substrate according to claim 14, wherein each of the NMOS transistors of said constant current sources operates in a saturation region wherein a drain current hardly changes with respect to a drain voltage.

19-24. (Cancelled)

25. (Previously Presented) An inkjet head cartridge comprising:
an inkjet printhead defined in claim 1; and
an ink tank configured to accommodate ink to be supplied to said printhead.

26. (Previously Presented) An inkjet printing apparatus comprising:
an inkjet printhead defined in claim 1; and
driving means for driving said printhead in accordance with a printing signal.